

Notice of Allowability

Application No.

10/816,991

Examiner

TAN TRINH

Applicant(s)

BREHLER ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 04-10-2004.
2. ☒ The allowed claim(s) is/are 1-27.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 07-28-2005, the information disclosure statement is being considered by the examiner.

Allowable Subject Matter

2. Claims 1-27 are allowed.

Reasons for allowance

3. The following is an examiner's statement of reasons for allowance:

Regarding independent claims 1, 16, 19, 22 and 25, the reference of Abdesselem (EP 1162752), teaches a method for correct a sleep clock of a wireless communication device (see abstract) to get accuracy for sensitivity to temperature drifts and other considerations (see page 4, lines 6-8) with variation in the multi-path profile from one block to another (see page 4, lines 45). And reference of Storm (U.S. Patent No. 6016312) teaches a radio telephone system enters a low power sleep mode and duration of sleep mode using a clock generator having coarse resolution and the exits the low power sleep mode synchronized with the system timing (see abstract and fig. 1) and the sleep time controller 200 places the radiotelephone 104 in a low power sleep mode having a duration based on the timing accuracy of the sleep clock generator 205. In the sleep mode, the sleep time controller 200 simulates system timing until end of the sleep duration determined by the call processor 112 (FIG. 1). The call processor 112 determines timing of one or more events for reactivating the radiotelephone 104 from sleep mode, the call processor calculates an enable oscillator time for restarting the oscillator 116, a warm-up time for

reactivating a portion of the RF portion 109 of the analog front end 108, and a pre-wake time for restarting a reference timer used for obtaining fine timing resolution necessary for restarting the CHIPX8 clock signal to the modem (see col. 5, lines 30-42).

However, the references of Abdesselem, Storm and the prior art of record fail to disclose, the A method for correcting a sleep clock of a wireless communications device to account for temperature induced errors by identifying and limiting probable multipath errors, the method comprising operations of: responsive to wakeup following a sleep state, measuring a difference between time reference output by a sleep clock and a network time reference and utilizing the difference to compute a current error in the sleep clock's frequency; determining whether predetermined criteria are satisfied by aspects of a current error including (1) magnitude and (2) character in relation to errors from previous sleep states; bounding a current error unless the criteria is met, the bounding operation comprising: utilizing a predetermined relationship between sleep state duration and predetermined sleep clock error maxima to identify an appropriate maximum error, and limiting magnitude of the current error to the identified maximum error; estimating a sleep clock's frequency utilizing inputs including the limited current error; utilizing a most recent estimate of the sleep clock's frequency whenever planning a wakeup time, as cited in claims 1, 16, 19, 22 and 25.

Regarding independent claim 8, the reference of Abdesselem, Storm and the prior art of record fail to disclose, A method for minimizing temperature induced errors experienced by a sleep clock used by a wireless communication device, the method comprising the following operations, performed responsive to each wakeup following a sleep state: consulting a time reference output by a wireless communications network, comparing the time reference to output

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of the sleep clock, and employing the comparison to compute a current error in sleep clock frequency; correcting a current error, comprising: if the current error does not exceed a predetermined threshold, utilizing the current error as the corrected error; if the current error exceeds the predetermined threshold, performing operations comprising: if the current error varies in sign from a last error, and magnitude of the last error exceeded the threshold, resetting a counter and limiting the current error according to prescribed maxima that vary according to sleep state duration; if the current error does not vary in sign from the last error, and the magnitude of the last error exceeded the threshold, incrementing the counter and determining whether the counter has reached a specified value; if yes, utilizing the current error as the corrected error; if no, limiting the current error according to the prescribed maxima and utilizing the limited current error as the corrected error; estimating a sleep clock's frequency utilizing inputs including the corrected error; utilizing a most recent estimate of the sleep clock's frequency when planning a next wakeup time, as cited in claim 8.

Regarding independent claims 9, 17, 20, 23 and 26, the reference of Abdesselem, Storm and the prior art of record fail to disclose, A method of correcting a sleep clock of a wireless communications device to account for temperature induced errors by identifying and limiting probable multipath errors, the method comprising operations of: responsive to wakeup following a sleep state, utilizing a network time reference to determine a current sleep clock frequency error; utilizing a predetermined relationship between sleep duration and predetermined sleep clock error maxima to identify an appropriate maximum error corresponding to said sleep state; identifying a conditioned sleep clock frequency error, which comprises the current sleep clock frequency error limited to the identified maximum error, unless errors of identical mathematical

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sign and exceeding a prescribed threshold have occurred for a predetermined number of consecutive times including the current error, in which case the conditioned sleep clock frequency error comprises the current sleep clock frequency without being limited; utilizing information including the conditioned sleep clock frequency error to estimate sleep clock frequency, as cited in claims 9, 17, 20, 23 and 26.

Regarding independent claims 12, 18, 21, 24 and 27, the reference of Abdesselem, Storm and the prior art of record fail to disclose, A method for correcting sleep oscillator operation of a wireless communications device, comprising operations of: estimating sleep oscillator frequency so as to compensate for estimated temperature induced errors; in estimating temperature induced errors, treating errors in sleep oscillator frequency as being temperature induced errors, with probable multipath errors being bounded to predetermined sleep clock error maxima corresponding to sleep duration over which the error occurred, as cited in claims 12, 18, 21, 24 and 27.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for Technology Center 2600 only)

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*Hand-delivered responses should be brought to the Customer Service Window (now located at the **Randolph Building, 401 Dulany Street, Alexandria, VA 22314**).*


5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Anderson, Matthew D., can be reached at (571) 272-4177.

The fax phone number for the organization where this application or proceeding is assigned is **(571) 273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Technology Center 2600 Customer Service Office** whose telephone number is **(703) 306-0377**.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh 
Division 2618
October 10, 2006

Anderson, Matthew D. (SPE 2618)

